California Environmental Protection Agency

⊘ Air Resources Board

California Regulation for the Mandatory Reporting of Greenhouse Gas Emissions

2013 GHG Data Reporting Hydrogen Production and Petroleum Refineries

March 20, 2014
Presentation Slides Available Here:
http://www.arb.ca.gov/cc/reporting/ghg-

rep/guidance/guidance-training.htm

California Air Resources Board

Updates to the Regulation for 2013 Data Reporting

California Air Resources Board

Outline

- MRR Updates
 - What has changed?
 - When do these changes become effective?
- Hydrogen Production
 - Additional data reporting requirements
 - Reporting Product Data
- Petroleum Refineries
 - Applicability of revisions
 - (CWB discussed in separate training)

California Air Resources Board

2

Regulation Updates

- Revisions went into effect January 1, 2014
- Regulation available here:

http://www.arb.ca.gov/cc/reporting/ghg-rep/regulation/mrr-regulation.htm

- Most updates are effective for 2013 data reporting (see section 95103(h))
 - Provisions requiring new data or methods are effective for 2014 data reporting or 2013, using best available methods for data
- See "Applicability of 2013 Revisions" guidance spreadsheet
 - Lists all regulation changes and when they become effective
 - Good reference for identifying areas with revisions

California Air Resources Board

4

Applicability of 2013 Revisions

- Excerpt of guidance spreadsheet
- http://www.arb.ca.gov/cc/reporting/ghg-rep/guidance/guidance-docs.htm

	Guidance for California's Mandatory Greenhouse Gas E 2/7/2014	missions Reporting	California Environmental Protection Agency. Air Resources Board							
	Revisions to the Regulation for the Mandatory Reporting of Greenhouse Gas Emissions: Year of Implementation for 2013 Regulatory Amendments									
ar ut	*Note: 2014 = 2013 data reporter Regulation Amendment	Regulation Section	a data reported in 2015, and 2014 BAM means Best Availab Description of the Regulatory Update	Year Provision is Effective* (2014/2015)						
1	10k Threshold Clarification	95101(a)(1)(B)	Clarify CO2, CH4, N2O included for 10k threshold	2014	General					
2	Lead Reporting	95101(a)(1)(B)8., 95124	Require calculation and reporting of process emissions by lead producers	2014 BAM	Subpart R - Lead Production					
3	Include Additional Subparts	95101(a)(1)(G)	Explicitly identify additional subparts for applicability, if they come to California	2014	General					
4	Common Control / Ownership	95101(a)(3)	Specifies requirements for changing responsibility from/to owner to/from operator	2014	General					
5	Reporting Threshold and Abbreviated Reporting Limitation	95101(b)(1)-(2)	Clarify CO2, CH4, N2O included for threshold; disallow abbreviated if total >25k for a 10k facility	2014	General					
6	Hydrogen Fuel Cell	95101(b)(6)	Fuel cell emissions must be included in applicability determination	2015	General					
7	Operators of LNG Production Facilities	95101(c)(10)	Require reporting by operators of LNG facilities that produce LNG from NG from interstate pipelines	2015	Subpart NN - Natural Gas, NGL, LPG, CNG, LNG Suppliers					

Requirements and Reporting GHG Data in Cal e-GGRT

California Air Resources Board

Hydrogen Production Revision Applicability

- 2014 BAM (Best Available Methods for 2013 data reported in 2014)
 - 95114(e)(1) report C and H content of feedstocks
 - 95114(g) report CH₄
 - $-\,$ 95114(i) report and subtract transferred $\rm CO_2$ and emissions reported elsewhere from your facility totals
 - 95114(j) report on-purpose and by-product H₂ production
 - 95114(k) report combustion CH₄ and N₂O emissions
 - 95114(I) report flaring emissions
- 2014 (full reg requirements for 2013 data reported in 2014)
 - Clarification of source category
 - Report C content & mole wt. for fuels and feedstocks

California Air Resources Board

Hydrogen Production

 Reporting Carbon and Hydrogen content and average molecular weight for all feedstocks

Equation P-1:	$CO_2 = (\sum_{n=1}^{k} \frac{44}{12} * Fdstk_n * CC_n)$	* MW/MVC) * 0.001		
Facility Name: Reporter Name: Unit Name/ ID: Reporting Period: Comments: Unit Type:	Hydrogen Production Process Unit			
Input Data				
Month	[Fdstkn] - Volume of the gaseous fuel and feedstock used in month in (sct (at standard conditions of 68 °F and atmospheric pressure) of fuel and feedstock)		[HCn] - Average hydrogen content of the gaseous fuel and feedstock, from the results of one or more analyses for month n (kg hydrogen per kg of fuel and feedstock).	[MWn] = Average molecular weight of the gaseous fuel and feedstock from the results of one or more analyses for month n (kg/kg- mole)
January				
February				
March				
April				
May				
June				
July August				
September September				
October				
November				
December				

Hydrogen Emissions Avoiding Double Counting

- You must report and subtract transferred CO₂ and emissions reported elsewhere from your facility totals
- You must perform these subtractions to avoid double counting these emissions
- Cal e-GGRT does not do these subtractions

California Air Resources Board

Hydrogen Production By-Product

- "By-product hydrogen" means hydrogen produced as a result of a process or processes dedicated to producing other products (e.g. catalytic reforming). Reporters must NOT include any:
 - Chemicals other than molecular hydrogen (e.g., CH₄ or steam)
 - H₂ later condensed and sold as liquid hydrogen

California Air Resources Board

Hydrogen Production On-Purpose

(covered product data)

- "On-purpose hydrogen" means hydrogen produced as a result of a process dedicated to producing hydrogen (e.g., steam methane reforming). Reporters must NOT include any:
 - Chemicals other than molecular hydrogen (e.g., CH₄ or steam)
 - H₂ later condensed and sold as liquid hydrogen
- Slide updated 5/8/2014 to reflect updated guidance here: http://www.arb.ca.gov/cc/reporting/ghgrep/guidance/hydrogen-producers.pdf

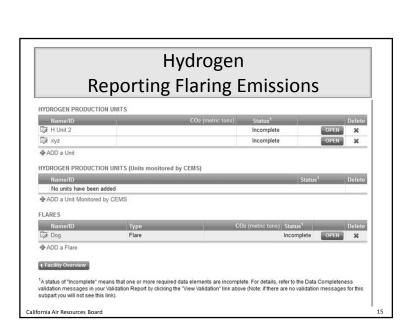
Liquid Hydrogen Sold

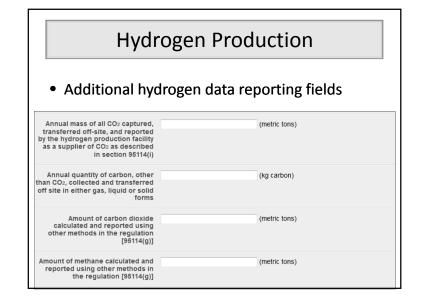
(covered product data)

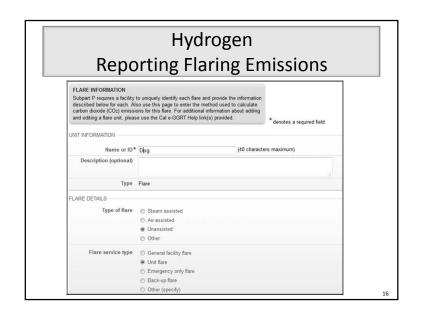
- "Liquid hydrogen sold" means the total amount of molecular hydrogen in liquid form sold to other entities
 - Based on sales records
 - Less any impurities

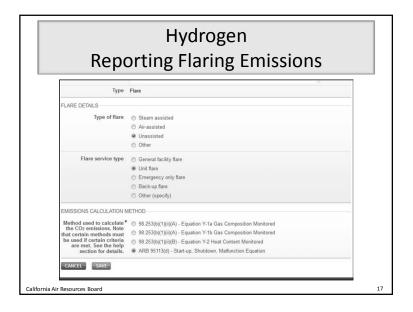
California Air Resources Board

Hydrogen Production • On-purpose and by-product reporting fields added to Cal e-GGRT and are shown below SUBPART P OTHER INFORMATION Please complete the required information included below. Is the hydrogen plant part of an OYes integrated refinery operation? No Annual mass of on-purpose (metric tons) hydrogen gas produced (covered product data) * On-purpose hydrogen means the total amount of molecular hydrogen (H2) contained in the product stream coming from a process or processes dedicated to producing hydrogen (e.g., steam methane reforming). Annual mass of molecular hydrogen (metric tons) (H₂) in feedstocks Annual mass of by-product (metric tons) hydrogen gas produced Annual mass of liquid hydrogen (metric tons) sold (covered product data)







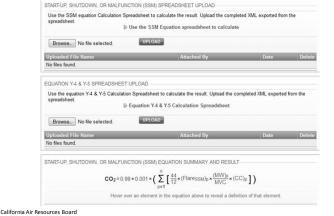


Reporting CH₄ and N₂O stationary combustion emissions (95114(k))

- CEMS
 - Report these emissions in Subpart P
- No CEMS
 - Report CH₄ and N₂O emissions in Subpart C
 - Create a new configuration in Subpart C
 - Name the configuration (e.g. H plant N₂O/CH₄)
 - Add fuel(s) to configuration
 - Select "enter my own" for CO₂, and enter zero
 - Let tool compute or enter your own values for CH₄ and N₂O

California Air Resources Board

Hydrogen Reporting Flaring Emissions



Petroleum Refineries Revision Applicability

- 2014 BAM (Best Available Methods for 2013 data reported in 2014)
 - no longer report CWT
 - for CWB must report annual volume unit throughput
- 2014 (full reg requirements apply for 2013 data reported in 2014)
 - 95113 refineries are separate entities for reporting purposes
 - 95113(I)(1) timing requirements for assessment of primary refinery products for materiality
 - 95113(I)(2) provide Solomon EII documentation to verifier

California Air Resources Board 2

Questions?

California Air Resources Board

21

Resource Web Sites

- Email reporting questions to: ghgreport@arb.ca.gov
- Reporting Guidance: Applicability, Metering http://www.arb.ca.gov/cc/reporting/ghg-rep/guidance/guidance.htm
- Cal e-GGRT Tool Training: Registration, Subparts http://www.arb.ca.gov/cc/reporting/ghg-rep/tool/ghg-tool.htm
- Cal e-GGRT Main Help Page http://www.ccdsupport.com/confluence/display/calhelp/Home

California Air Resources Board

23

Additional Training Sessions

- ARB sector-specific training (check link for times) http://www.arb.ca.gov/cc/reporting/ghg-rep/guidance/guidance-training.htm
- Contact ARB staff as needed for questions

California Air Resources Board

22

Key Reporting Dates

Date	Activity
February 1	Regulatory deadline: Due date for electric power entities to register specified facilities outside California
February 13	Public release of Cal e-GGRT
April 10	Regulatory deadline: Reporting deadline for facilities and suppliers of fuels and carbon dioxide, except when subject to abbreviated reporting
June 2	Regulatory deadline: Reporting deadline for electric power entities and those subject to abbreviated reporting
July 15	Regulatory deadline: Deadline for corrections to RPS Adjustment data required for electric power entity data reports
September 2	Regulatory deadline: Final verification statements due (emissions data and product data)

California Air Resources Board

GHG Reporting Contacts

Subject Matter	Contact	
GHG Mandatory Reporting (General)	Brieanne Aguila, Manager 916.324.0919	
Reporting Requirements, Stationary Combustion, Other Sectors (cement, glass, pulp and paper, etc.)	Patrick Gaffney 916.322.7303	
Reporting Tool Registration and General Questions	<u>Karen Lutter</u> 916.322.8620	
Electricity Generation and Cogeneration Facilities	Patrick Gaffney 916.322.7303	
Electricity Retail Providers and Electricity Marketers	<u>Wade McCartney</u> 916.327.0822	
Fuel and CO_2 Suppliers - Transportation Fuels, Natural Gas, LPG, CO_2	<u>Syd Partridge</u> 916.445.4292	
Petroleum Refineries, Hydrogen Plants, Oil & Gas Production	Byard Mosher 916.323.1185	
Product Data – Refineries, and Oil & Gas	<u>Byard Mosher</u> 916.323.1185	
Greenhouse Gas Report Verification	Renee Lawver, Manager 916.322.7062	
Chief – Climate Change Program Evaluation Branch	Rajinder Sahota, Chief 916.323-8503	

